EXTRACTS FROM THE TALMUD AND FROM CELSUS ILLUSTRATIVE OF THE STATE OF MEDICAL SCIENCE AT THE BEGINNING OF THE CHRISTIAN ERA (GYNÆCOLOGICAL).

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When we read, in St Mark's Gospel, of the case of the woman whose strength had been undermined by a uterine hæmorrhage going on for twelve years, more or less continuously—who had suffered many things at the hands of many physicians; who had spent all that she had, and was nothing bettered but rather grew worse—our curiosity is aroused as to what kind of treatment the poor woman did undergo which had been both so expensive and so ineffectual. Nor does St Luke, the physician evangelist, who lingers over the pathological side of his Gospel with an intense interest, throw any light on the details of this particular case. He, too, only relates the case and its miraculous and instantaneous cure by touch of the Saviour's garment. It is interesting to note how St Luke does not add the worse, "but rather grew worse," possessed as he was with the finest spirit of consideration for his fellow-practitioners, we must suppose. The woman whose sad case they record had seen many physicians. It is not likely that she had seen Celsus, whose headquarters were in Rome, though

wealthy patients at that time appear to have travelled long distances to see a physician of eminence. The inadvisable habit of rapidly changing doctors is said still to be common in the East, and of many an Oriental patient the sepulchral inscription mentioned by Grotius may be applicable, "Turba medicorum me perdidit." There seems to be little perseverance in the same treatment or medicine, and if relief does not speedily come, superstitious practices are resorted to in order to aid the medicine, and are gradually increased till at last drugs are altogether given up. In the Gemara, or medical commentary of the Babylonish Talmud, many cases are given. So gruesome and grotesque are they, that we may infer that this woman of the Scriptural story may have been the victim of much harsh treatment. Dr Lightfoot shows (Hor. Heb.) the torture women were put to for cure of uterine hæmorrhage. The following may be quoted, which illustrates first the use of drugs, then of drugs and superstitions, and last of all of superstitions entirely:—"Take of Persian onions thrice three measures, boil them in wine, and give it to her to drink, and say, 'Arise from thy flux.' But if this does not prevail, set her in a place where two ways meet, and let her hold a cup of wine in her hand, and let somebody come behind her and affright her, and say, 'Arise from thy flux.' But if this does not benefit, let them dig seven ditches, in which let them burn of such vines as are not circumcised (that is, that are not yet four years old), and let her take in her hand a cup of wine; and let them lead her away from this ditch, and make her sit down over that, and let them remove her from that, and make her sit down over another; and in every removal you must say to her, 'Arise from thy flux,' and so on." Other cases need not be quoted. In all of them, psychological factors, such as mental or bodily shock, fear, faith, hope, appear to have been employed with more efficiency as hæmostatics than any drug. It may be gathered from the Talmud that *treatment* in the hands of the Jewish doctors was poor, and far behind their speculations and experiments. With Celsus, the Gentile physician, the converse was the case. But the questions taken up by the Jews are of interest, both to physiologists and pathologists of the present day.

Medico-legal and medico-ethical questions abound. To the Obstetrical Society the traditions and physiological ideas in the Gemara are not without special interest. Many of them are sexual, and have much to do with reproduction. To Rabbinowicz, who lately published his book, "La Medecin du Talmud," we owe most of our knowledge of the theories which exercised the minds of doctors, Jewish and Gentile, nearly two thousand years ago. He has fished up, in a perfect state of preservation, out of old Jewish literary wreckage, many an antique medical curiosity. Bergel also has brought to light much that is interesting. Before referring to Celsus, in whose name centres and is handed down to us the best medical traditions of the time, and from whose writings a few quotations are taken later on, I shall, in the first place, give one or two extracts, suitable for this Society, from writers on the Talmud. Some of the subjects placed on scientific lines might be provocative of a good deal of discussion by us.

To begin with the embryo. Its life from the time of conception, was believed by the rabbis to be under the special care of an angel, who, during its nine months' growth *in utero*, commenced its education, giving it its first tendencies, and initiating it unconsciously in all learning, but especially in the knowledge of the Rabbinical laws.[1] In the work of this angel we see a figurative expression of their belief in heredity and inherited tendencies, the family characteristics or inborn traits of Darwin as we would now express it. At the time of birth the angel smites it on the mouth,[2] as if to sever it from all the *pre*natal impressions and influences that acted upon it as the susceptible fœtus *in utero*. The angel cuts, as it were, a metaphysical umbilical cord, and starts the infant on his individual life, endowed with his inherited constitutional energies in a new environment.

Then, as regards the probable sex of the embryo, the Talmud goes on to show how this depends, as it unscientifically expresses it, "upon whether at coitus the male or the female seed gets first into the womb. If the former, then female children result; if the latter, male children."[3] The difference of sex ought to

[1] Bergel, Nidah, 30, 2. [2] Dr James Finlayson's Talmud, p. 232.
[3] Gemara, Berach, 60; Nidah, 28.

make itself known, however, even during pregnancy, by certain signs. "A woman who is pregnant with a male child ought to have a better complexion, the quickening should occur earlier, and parturition also ought to be easier and less painful. The last-mentioned circumstance is specially insisted upon by the Talmudists."[1] A sexual theory, bearing on this subject, is given by Rabbinowicz in the following words:—"Si la femme donne sa semence (le sang) avant l'homme, le fœtus sera un garçon; si c'est le mari qui donne d'abord sa semence (le sperm), le fœtus sera une fille. On peut donc, si on veut avoir des garçons, l'homme peut, pour cet effet, retarder son emission de sperm pour laisser la femme donner sa semence avant lui. Rabba dit qu'on obtient des garçons en repentant le coït; car, la femme excitée par le premier coït, émettra son sperm avant l'homme pendant le second."[2]

The subject of cohabitation during pregnancy was much discussed by the doctors in the Gemara. On this matter Rabbinowicz sums up their opinion in these words:—"Les premiers trois mois de la grossesse (l'enfant se trouvant dans la region inferieure) la cohabitation est mauvaise pour la mère et pour l'enfant; les autres trois mois, la cohabitation est mauvaise pour la mère et bonne pour l'enfant; les derniers trois mois elle est bonne pour la mère et pour l'enfant, car elle fortifie le fœtus."[3]

Bergel tells us that the Talmudists refer to monsters like insects, fish, cattle, birds, and indeed like almost any creature.[4] They did not know, to use a modern expression, that "human organo-genesis is a transitory comparative anatomy."[5] They might have found some explanation of these phenomena of arrested and altered development in this fact of science. Nor were they aware of the remarkable frequency, as has recently been pointed out by Gheorghin, as the probably cause of malformations, of acute or chronic infectious disease being present in one or other of the parents at the time of conception.[6] As

[1] Finlayson's Translation of Bergel, Med. der Talmud, p. 73.
[2] Page 85, Nidah, fol. 31.
[3] Page 84, Nidah, fol. 31.
[4] Med. der Talmudisten, Nidah, 21, 1, etc.
[5] Marshall's Vertebrate Embryology, p. 26.
[6] Professor Adami, M'Gill University, May 1901.

regards hermaphrodites, the Talmudists could not decide whether they belonged to the male or female sex. Unfortunately, there was no Ballantyne in those days to give morphological expositions on this difficult subject. Had there been, some unfortunate creatures born with such deformities might not have been excluded from civil and religious rights, as was then the penalty for having been born deformed.

As to the mother. On the ancient law regarding the purification of the mother after childbirth, we have a full account given in Leviticus (Lev. xii. 2, 4, 5) as follows:—"If a woman have conceived seed, and borne a *man child;* then she shall be unclean *seven* days; according to the days of the separation for her infirmity shall she be unclean. And she shall then continue in the blood of her purifying *three and thirty* days. But if she bear a *maid child*, then she shall be unclean two weeks, as in her separation; and she shall continue in the blood of purifying *three score and six* days." In other words, the period of uncleanness and purification was double in the case of a female birth from what it was in the case of a male.

Much discussion has arisen from this curious point in the Levitical law. Certainly it does not regulate us in our midwifery practice nowadays. Indeed, do we not rather look for greater difficulty in labour with a male child, and more anxiety in the puerperium following? But this probably has arisen from altered conditions of life. In the early history of the human race, out-of-door and nomadic habits of life, as in the case of the Hebrew people, must have greatly invigorated the female constitution for child-bearing. Times have changed for Jew and Gentile alike. The world was not so crowded, nor life so strained, then as it is now. Hence the sad departure from the physiological simplicity of reproduction of primeval times.

To account for the greater difficulty in labour with a female child, a writer in the Talmud states[1] that the female fœtus turns round so as to present (at birth) with the face *anteriorly*, while the male presents with the face *posteriorly*. We can hardly doubt the accuracy of this statement, being a matter simply of observation and not of theory. Granting

[1] Finlayson's Talmud, p. 237.

that this observation is correct, we have some explanation of the greater difficulty in bringing forth a female child, and the necessity for prolonged care afterwards, according to the Levitical law. It is to be observed, however, that the writer only states the position of the head at birth, and says nothing about the mechanism of labour. One would infer from the statement, that all female children would lie with the occiput posteriorly. Nowadays, the largest proportion of all births of female as well as male children have the occiput to the left, and of these the largest number are R.O.A. In comparing the statements of the ancient world with the records of our own Maternity Hospital, I find that in the latter, occipito-posterior births are now only one quarter more frequent in females than in males. This large number of males coming into the world with occipito-posterior presentation at birth I believe to be abnormal, and an evidence of a departure, in these later ages, from an original law in parturition.

In regard to the *sex* of the child determining a longer or shorter period of purification for the mother after child-birth, the following doctrine is laid down by the Talmud, a doctrine which it is difficult for us quite to understand:—"Avant quarante jours aucun fœtus n'est formé; au commencement du quarante et unième jour le fœtus, mâle ou female, est déjà formé; d'après rabbi Ismael un garçon est formé le quarante et unième jour et une fille le quatre-vingt-unième jour."[1] The rabbi, founding on Leviticus xii., thus held that the male is formed on the forty-first day and the female on the eighty-first, which was surely believed as a fact from Hippocratic times. Their theory was that *the slower development of the female fœtus in utero resulted in the slower process of purification in the mother after its birth.* But we may believe that the condition of robust health of the mother, which was probably the explanation of her having a *male* child, the earnest desire of every woman in those days, was also the explanation of her more rapid recovery.

These dates of the forty-first and eighty-first days are difficult to reconcile with our knowledge of the develop-

[1] Rab. Misch. Nid., fol. 30.

ment of the organs of generation, which does not commence until after the rudiments of the principal organs of the body have appeared. The internal organs of generation first make their appearance, and for a brief period no sexual difference is perceptible in them. The external organs, which subsequently begin to be formed, are also identical to the naked eye in appearance in the two sexes as late as the fourteenth week,[1] that is, from the ninety-first to the ninety-eighth day. Had we no microscope, we could not discriminate the sex of the fœtus till about the ninetieth day at soonest. We have, therefore, to believe that the Jewish doctors could determine the sex of the fœtus at an earlier date than we can; in other words, that the sex of the child appeared sooner then than it does now.

Such a keen interest was taken in this question, that history records how the Greek queen, the notorious Cleopatra, made experiments to settle this point.[2] She ordered, it is said, female pregnant slaves to be killed at certain dates after conception. It was found on dissection, said some, that the sex of the male fœtus could be recognised at forty days, but the female only at eighty days. But from the following sentence it would even appear that the sex of the fœtus of either sex could be seen at forty days. "Mais les autres docteurs lui appasè rent un fait d'observation; car, dirent-ils, la reine Cléopâtre ayant condamné à mort et fait exécuter ses esclaves, on les a disséquées et on a trouvé des fœtus des deux sexes qui etaient tous les deux formés au haut de quarante jours." Obviously there was want of scientific accuracy in such barbarous experiments as these, and room for much fallacy and deception. The queen, no doubt, apart from her own curiosity in such matters, may have been induced by the Alexandrian physicians to assist them in settling this vexed and difficult point in development, on which, according to their theory, rested the correctness of the law regarding purification, given nearly fifteen hundred years before. Of course, it is possible in these experiments they may have made their observations adjust themselves to preconceived opinions, but it is equally possible that they were

[1] *Quain's Anatomy.* [2] Rab. Nidah, p. 83.

substantially correct, as in the case of the invariable occipito-posterior presentation of the female child.

To us, not less than to these Jewish doctors, does the sexual organo-genesis of the forty and eighty days present a puzzle. Amongst the early Hebrew people, when reproduction and multiplication of descendants was a matter of paramount importance, there seems to be evidence of an earlier development of the organs concerned in this process. And when we consider what physiological modifications in development may have occurred during the well-nigh three and a half millenniums that have elapsed between the giving of the law and our own time, we may well feel it unscientific to criticise. It becomes scientists at least to speak with diffidence. We know that types of disease change. Even certain types of face seem to predominate in certain centuries. Physiological processes also change. As an instance of the latter, the long period of nursing in ancient times may be quoted—a wonderful change from that physiological process of to-day. The following sentence is from Judas Maccabæus, "O my son, have pity on me that bare thee, and gave thee suck *three* years, and nourished thee and brought thee up unto this age, and endured the troubles of education" (2 Mac. vii. 27). In pathology, too, the conditions known in one generation are not known in another. Dr Jardine, in a recent paper on the Glasgow Maternity Hospitals, says, "It is a very striking fact that we now have so many cases of contracted pelvis to deal with, while in the early days of the Hospital they were so exceedingly rare." And as regards obstetric practice, many a physician nowadays never meets with a case of perfectly *normal* labour. Such instances are brought forward to show what changes may occur, and to guard, as it were, an ancient physiology from the criticism a present-day physiological orthodoxy might offer, remembering that it is possible that there may be change in the relative *evolution* of organs, according to mode of life and circumstance, in the development of the human race. (*See* Appendix, p. 226.)

Turning from these technical and theoretical questions, I would now, in order to fulfil the purpose of this paper, take up shortly some general points, illustrative of the state of the

medical profession, in its more practical and matter-of-fact aspects at the beginning of the Christian era. Nothing remains to us from which we get so much information regarding the state of medicine generally as the *De Re Medica* of Celsus. This work, in eight books, derives special importance from the fact that it is the first complete medical treatise which we possess in succession to those of Hippocrates, composed four centuries earlier. Aulus Cornelius Celsus, as he is designated in the old Vatican manuscripts, lived partly before and partly after the time of our Lord, from about B.C. 25 to A.D. 45. He seems to have been a man of great culture, and had carefully studied and compiled all medical writings from whatever source. It is noticeable that, though he did not follow their opinions, he speaks with respect of the medical practice of what was to him that of the ancients. He seems to have been the only physician of note since Hippocrates, and is justly esteemed one of the most outstanding men in the ancient world for his ease and elegance in writing on medical and allied subjects. Curiously enough, all his writings, except on medicine, have perished during the barbarous ages. In our own day it is sometimes said that the opprobrium of medical men is that they are not sufficiently educated outside of their own profession. This could not apply to Celsus. But the medical field *per se* was small in his time. Quintilian gives honourable testimony to the extent of his learning. In one of his works, after mentioning the greatest geniuses that ever appeared in Greece or Rome, as Homer, Plato, Aristotle, Cato, Varro, and Cicero, he adds, "Why should I name any more instances? When even Cornelius Celsus, a man of moderate share of genius, has not only composed treatises on all these arts, but has also left precepts of the military art, and medicine. The bare attempt requires us to believe that he understood all these subjects; but to give perfection to so great work is a difficult task, to which no man was ever found equal."[1] Of all his writings, it may reasonably be concluded that those on medical subjects were the most perfect, as being the fruit of his special studies. Not only for beauty of Latin style, but also for medical philosophy and ethics, the study of Celsus was much recommended

[1] Grieve's *Celsus*, p. 6.

to the students of this University not a century ago. He was then an epistle known and read of all medical men. A contemporary of Celsus, referring to one of his writings on the subject of bees, uses this expression, "Concerning which it is impossible to surpass the diligence of Hyginus, the profusion of ornaments in Virgil, and the elegance of Celsus. Hyginus has, with great industry, collected the precepts which lay scattered in the ancients; Virgil has adorned the subject with poetic powers, and in Celsus we find a judicious admixture of both these manners."[1]

It is interesting to feel that this admiration for Celsus should be as great now as it was nineteen centuries ago, and his works still considered a classic of a high order. In the matter of medical detail we can learn little. As was to be expected, his prognosis seems to have excelled his diagnosis. Like the old nurse in our Infirmary, who knew nothing of anatomy or physiology, but of whom it was said that the surgeons themselves were afraid to venture an opinion of prognosis contrary to her view of the case, so do we, in a sense, feel in the presence of Celsus. This kind of intuition in prognosis had he in a marked degree, acquired by careful, nurselike, and continuous study of his patient. That he was a careful student of disease clinically may be gathered from the following sentence in his book:—"From these things it may be inferred that many people can't be attended by one physician, and that the man to be trusted is he who knows his profession, and is not much absent from the patient. But they who practise from views of gain, because their profits rise in proportion to the number of patients, readily fall in with such rules as do not require a close attendance, as in this very case. For it is easy for such as seldom see the patient to count the days and the paroxysms; but it is necessary for him to *sit* by his patient, who would form a true judgment of what is alone fit to be done, when he will be too weak unless he get food," etc.[2]

His judgment as to the use or abuse of drugs, and his knowledge of human nature stamp him a born physician and a father in his profession. The partition wall of nineteen

[1] Grieve's *Celsus*, p. 8. [2] *Ibid.*, p. 14.

hundred years between his time and ours seems to melt away as we read the following maxims he has left us, and we can almost fancy we have the genial old man with us this evening:—"Tis good for a sound man to diversify his way of life; to be sometimes in the country, sometimes in the city, and frequently in the fields; to sail, to hunt; sometimes to rest, but exercise himself frequently—for indolence enervates the body, labour strengthens it; the first brings on a quick old age, the other makes a long youth."[1]

Again: "The contemplation of nature, though it cannot make a physician, yet may render him fitter for the practice of medicine."[2]

"Now, when there is no certain knowledge of a theory a mere opinion about it cannot discover a sure remedy."[3]

"The failings of those who practise medicine are not to be charged to the art itself."

"The physician of experience is recognised by his not at once seizing the arm of his patient as soon as he comes to his side, but he looks upon him, and as it were sifts him first with a serene look to discover how he really is; and if the sick man manifests fear, he soothes him with suitable words before proceeding to a manual examination."[4]

"Little minds confess nothing disgraceful to themselves, for they have nothing to lose. But to a great mind it is befitting to acknowledge even mistakes, especially when the results of medical practice are handed down for the benefit of posterity."[5]

Such aphorisms abound in the *De Re Medica*.

There are many obstetric points discussed, such as the method of extraction of the child after version, the treatment of uterine hæmorrhage, etc., interesting, but not of practical value to this Society in the light of to-day. Unlike his Jewish colleagues, Celsus paid little attention to traditional opinions and speculations. Rather was he the more taken up with the importance of nursing and general treatment. Indeed, it is interesting to note in how many cases ancient notions and treatment joined hands with modern science.

[1] Grieve's *Celsus*. [2] *Ibid*. [3] *Ibid*.
[4] Baas' *History of Medicine*, p. 161. [5] *Ibid*., p. 161.

In a general survey of his works one is impressed with the truth of the maxim, "Much arises which has already perished, and what is now honoured is already declining." But is not this true in our own time? Through the dark ages that have rolled between Celsus and ourselves there have been long periods of retrogression in medical knowledge, but there have appeared also not a few bright stars in the darkness. Now have we reached the day-spring of science, whose morn, with healing in his wings, has little more than dawned, a science at the touch of whose garment the gynæcologist of to-day may receive for his patient more certain relief than in days gone by, yea, in some cases, cure almost miraculous.

Appendix.—Since writing this paper, my attention has been drawn to the accelerating and belating of organs in organogenesis in Ernest Mehnert's work, *Biomechanik erschassen aus dem Principe der Organogenese*, in which considerable light is thrown on the discrepancy in the development of the sexual organs in the Jews, before referred to. The more rapid development of these organs in the fœtus is probably racial and peculiar to the early Hebrews, in whom reproduction and replenishing the earth with people was so important. Mehnert's book is a difficult one, but Professor J. Arthur Thomson, of Aberdeen, in his review of it, in *Natural Science*, May 1898, has given its gist. It is, that the *rate* of growth varied in different parts of the embryo, and *increased in proportion to the physiological dignity or importance of the part or organ.* In referring to a corollary in Mehnert's biogenetic law, Thomson's words are: "That as an organ rises in physiological importance and structural differentiation, it acquires a proportional *increase* in its *rate* of development."

And the converse of this is equally true: "The organ which has lost its functional dignity, so to speak, is handicapped in its rate of development." Or in other words, "Retrogression and retardation go hand in hand."

It is interesting to find in the Talmud a statement on development confirming Mehnert's opinions, which are the outcome of advanced modern study in biological science.